

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A device for multiplying the pulse frequency of a signal in the form of a pulse train, the device comprising:

an input means-port for the signal and a plurality of access means-points for accessing the signal at points with a predetermined phase difference between said points; ~~the device additionally comprising a plurality of means~~

first circuits at a first level for combining accessed signal pairs, there being ~~one and the a~~ same phase distance within all the combined pairs, the output from each first level ~~combining means-circuit~~ being a new pulse train; ~~the device additionally comprising combining means~~

a second circuit at a second level for ~~combining~~ combining the pulse trains from the first level circuits into ~~one a~~ single pulse train, ~~characterised in that the combining means at the first level are such that the pulses in their~~

wherein output pulse trains have rise flanks which ~~always~~ coincide with the rise flank of the first signal in the combined accessed signal pairs, and fall flanks which ~~always~~ coincide with the fall flanks of the second signal in said pair;

wherein the phase distance within the combined pairs is calculated according to the formula $(360/[2*N]) + 180$, where N is the desired multiplication factor, N being a number greater than 1, and

wherein the device further comprises switching circuitry connected to the input of one or several of the first level circuits for switching the input to provide the first level circuits with

another phase distance within the combined signal pair according to the formula $(360/[2*N]) + 180$, where N is a desired multiplication factor and N is a number greater than 1.

2. Canceled.

3. Canceled.

4. (Original) The device of claim 31, ~~in which wherein~~ the ~~switches can also be used~~ switching circuitry is configured to disconnect the input signals to one or more of the first level ~~combining means~~circuits.

5. (Currently Amended) The device of claim 1, ~~in which wherein~~ the ~~combining means at~~ the first level circuits comprise logic circuits with an AND-function.

6. (Currently Amended) The device of claim 1, ~~in which wherein~~ the ~~combining means at~~ the second level circuit ~~comprise~~comprises a logic ~~circuits~~ with an OR-function.

7. (Currently Amended) ~~The device of claim 1, additionally comprising~~ A device for multiplying the pulse frequency of a signal in the form of a pulse train, the device comprising:
an input port for the signal and a plurality of access points for accessing the signal at
points with a predetermined phase difference between said points;

first circuits at a first level for combining accessed signal pairs, there being a same phase distance within all the combined pairs, the output from each first level logic circuit being a new pulse train;

a second circuit at a second level for combining the pulse trains from the first level circuits into a single pulse train,

wherein output pulse trains have rise flanks which coincide with the rise flank of the first signal in the combined accessed signal pairs, and fall flanks which coincide with the fall flanks of the second signal in said pair,

wherein the device further comprises flip-flops between the output of the first level combining means circuits and the inputs of the second level combining means, in order circuit to avoid having multiple pulses, coming from the combining means at the first level circuits during the two periods of the input signal.

8. (Currently Amended) A method for multiplying the pulse frequency of a signal in the form of a pulse train comprising: the step of

accessing the signal at a plurality of points with a predetermined phase difference between said points; ~~and~~

first level combining of the signal pairwise from said accessed signal points so that there is one and the same phase distance within all the combined pairs, the output from each first level combination being a new pulse train; ~~the method additionally comprising the~~

combining at a second level of the pulse trains from the first level into one single pulse train, characterised in that

wherein the combining at the first level is carried out in such a manner so that the pulses
in the output pulse trains at the first level have rise flanks which ~~always coincide~~ with the rise
flank of the first signal in the combined accessed signal pairs, and fall flanks which ~~always~~
coincide with the fall flanks of the second signal in said pair,

wherein the phase distance within the combined pairs is calculated according to the
formula $(360/[2*N]) + 180$, where N is the desired multiplication factor and N is an integer
greater than 1, and

wherein the method further comprises the ability to alternate the phase distance between
the signals used in one or several of the combinations at the first level.

9. Canceled.

10. Canceled.

11. (Currently Amended) The method of claim 108, ~~by means of which wherein said~~
alternating it is also permits possible to disconnect disconnecting the at least one of the input
~~signals-signal~~ to one or more of the first level combining ~~means~~ circuits.

12. (Currently Amended) The method of claim 8, according to which the combining at the
first level comprises logic operations with an AND-function.

13. (Currently Amended) The method of claim 8, according to which the combining at the
second level comprises a logic operations-operation with an OR-function.

14. (Currently Amended) The method of claim 8, additionally comprising ~~the use of~~ using flip-flops between ~~the~~ a output of the first level ~~combining means~~ and the inputs of the second level ~~combining means~~, in order to avoid having multiple pulses, ~~coming from the combining means at the first level during the two periods of the input signal.~~